

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 58-100419

(43)Date of publication of application : 15.06.1983

(51)Int.Cl.

H01L 21/20

H01L 21/26

(21)Application number : 56-199020

(71)Applicant : SEIKO EPSON CORP

(22)Date of filing : 10.12.1981

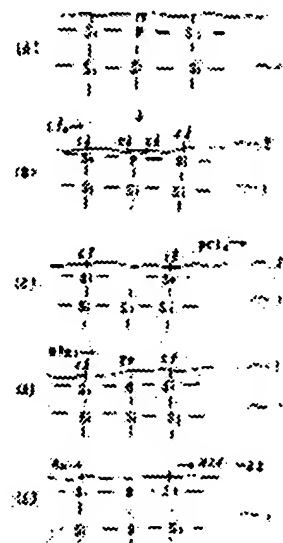
(72)Inventor : IWAMATSU SEIICHI

## (54) PARTIAL ATOMIC LAYER EPITAXIAL METHOD

### (57)Abstract:

**PURPOSE:** To permit growth of an epitaxial layer of a partial atomic layer by a method wherein atoms or molecules are partially adsorbed on the surface of a substrate so that a part of atoms or molecular-constituting atoms is coupled to the substrate surface.

**CONSTITUTION:** The surface of an Si substrate 1 containing P is cleaned through plasma in an Ar vacuum container, and chlorine gas is passed to form a Cl adsorption layer 2 on the surface of the substrate 1 at the room temperature. Then, the substrate 1 is heated up to about 100° C, so that only P atoms are converted to  $PCl_3$  and evaporated. By passing  $BBr_3$  at the room temperature in that state, B forms an adsorption layer 3 together with Br in positions where P atoms have been removed from the surface of the substrate 1. Then, by passing hydrogen on the substrate 1 at the room temperature, Cl, Br, etc. are converted to HCl, HBr, etc. and removed, whereby P atoms are replaced by B atoms which are buried in position where P atoms have existed.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]